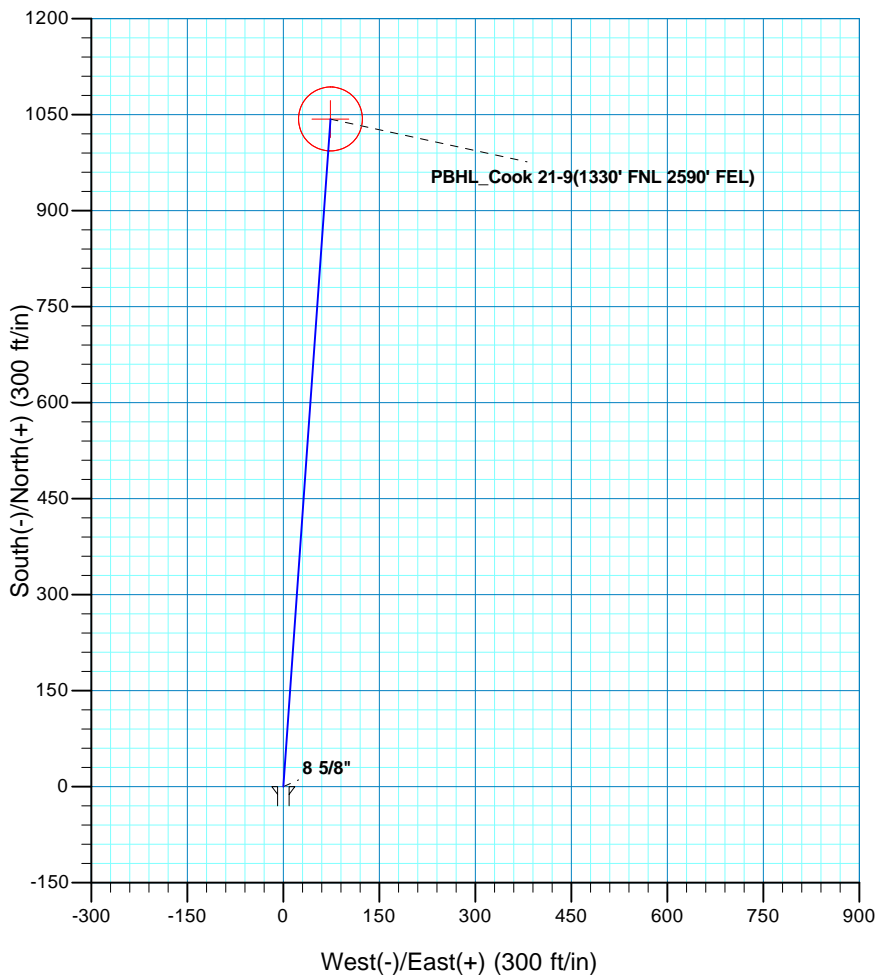
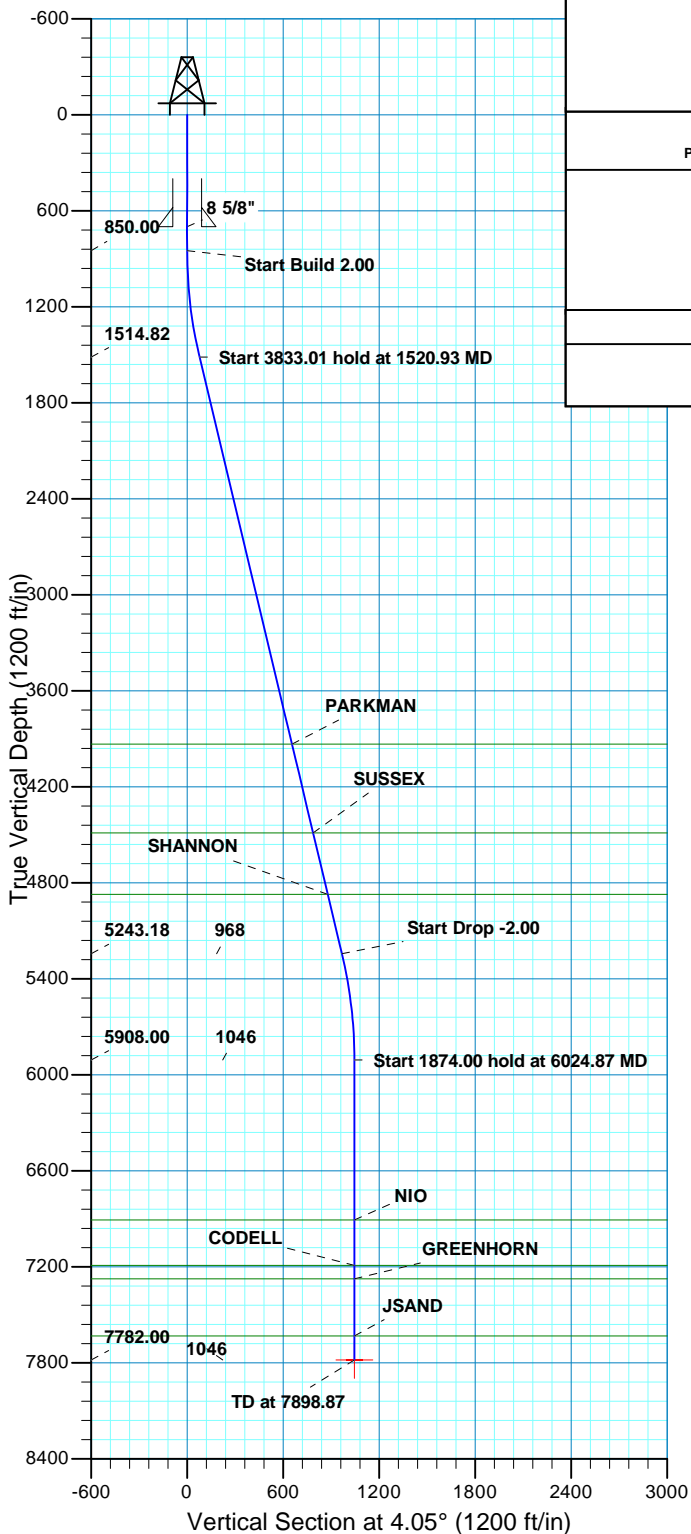


WELL DETAILS: P_Cook 21-9					
GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1300033.34	3232300.05	40° 9' 14.393 N	104° 40' 8.123 W

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL	7782.00	1043.31	73.79	1301077.30	3232364.05	40° 9' 24.703 N	104° 40' 7.172 W
- plan hits target center							
Shape							
Circle (Radius: 50.00)							

SECTION DETAILS										
	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	
	1520.93	13.42	4.05	1514.82	78.01	5.52	2.00	4.05	78.21	
	5353.94	13.42	4.05	5243.18	965.30	68.27	0.00	0.00	967.71	
	6024.87	0.00	0.00	5908.00	1043.31	73.79	2.00	180.00	1045.92	
	7898.87	0.00	0.00	7782.00	1043.31	73.79	0.00	0.00	1045.92	PBHL_Cook 21-9(1330' FNL 2590' FEL)
PROJECT DETAILS: COLORADO NORTHERN ZONE - 83							FORMATION TOP DETAILS			
							TVDPath	MDPath	Formation	
Geodetic System: US State Plane 1983 Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Colorado Northern Zone Location: SECTION 9 T2N R65W System Datum: Mean Sea Level							3934.00	4008.01	PARKMAN	
							4488.00	4577.56	SUSSEX	
							4872.00	4972.34	SHANNON	
							6908.00	7024.87	NIO	
							7192.00	7308.87	CODELL	
							7276.00	7392.87	GREENHORN	
							7632.00	7748.87	JSAND	
CASING DETAILS										
				TVD	MD	Name	Size			
				700.00	700.00	8 5/8"	8.625			



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_COOK 25-9 PAD**

**P\_Cook 21-9**

**P\_Cook 21-9**

**Plan: PLAN #1 8-16-10 RHS**

## **Standard Planning Report**

**16 August, 2010**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Cook 21-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Site:</b>	WELD_COOK 25-9 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Cook 21-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Cook 21-9		
<b>Design:</b>	PLAN #1 8-16-10 RHS		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

<b>Site</b>	WELD_COOK 25-9 PAD, SECTION 9 T2N R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,300,001.29 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,232,300.07 usft
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13.200 in
		<b>Grid Convergence:</b>	0.54 °

<b>Well</b>	P_Cook 21-9, 2374' FNL 2623' FWL		
<b>Well Position</b>	<b>+N/-S</b>	32.04 ft	<b>Latitude:</b> 40° 9' 14.076 N
	<b>+E/-W</b>	0.28 ft	<b>Longitude:</b> 104° 40' 8.126 W
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	4,873.00 ft

<b>Wellbore</b>	P_Cook 21-9				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	08/16/2010	8.90	66.90	53,100

<b>Design</b>	PLAN #1 8-16-10 RHS			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	4.05

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,520.93	13.42	4.05	1,514.82	78.01	5.52	2.00	2.00	0.00	4.05	
5,353.94	13.42	4.05	5,243.18	965.30	68.27	0.00	0.00	0.00	0.00	
6,024.87	0.00	0.00	5,908.00	1,043.31	73.79	2.00	-2.00	0.00	180.00	
7,898.87	0.00	0.00	7,782.00	1,043.31	73.79	0.00	0.00	0.00	0.00	PBHL_Cook 21-9(133

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Cook 21-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Site:</b>	WELD_COOK 25-9 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Cook 21-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Cook 21-9		
<b>Design:</b>	PLAN #1 8-16-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	1.00	4.05	900.00	0.44	0.03	0.44	2.00	2.00	0.00
1,000.00	3.00	4.05	999.93	3.92	0.28	3.93	2.00	2.00	0.00
1,100.00	5.00	4.05	1,099.68	10.87	0.77	10.90	2.00	2.00	0.00
1,200.00	7.00	4.05	1,199.13	21.30	1.51	21.35	2.00	2.00	0.00
1,300.00	9.00	4.05	1,298.15	35.18	2.49	35.27	2.00	2.00	0.00
1,400.00	11.00	4.05	1,396.63	52.50	3.71	52.63	2.00	2.00	0.00
1,500.00	13.00	4.05	1,494.44	73.24	5.18	73.42	2.00	2.00	0.00
1,520.93	13.42	4.05	1,514.82	78.01	5.52	78.21	2.00	2.00	0.00
Start 3833.01 hold at 1520.93 MD									
1,600.00	13.42	4.05	1,591.72	96.32	6.81	96.56	0.00	0.00	0.00
1,700.00	13.42	4.05	1,688.99	119.46	8.45	119.76	0.00	0.00	0.00
1,800.00	13.42	4.05	1,786.27	142.61	10.09	142.97	0.00	0.00	0.00
1,900.00	13.42	4.05	1,883.54	165.76	11.72	166.18	0.00	0.00	0.00
2,000.00	13.42	4.05	1,980.81	188.91	13.36	189.38	0.00	0.00	0.00
2,100.00	13.42	4.05	2,078.08	212.06	15.00	212.59	0.00	0.00	0.00
2,200.00	13.42	4.05	2,175.35	235.21	16.64	235.80	0.00	0.00	0.00
2,300.00	13.42	4.05	2,272.62	258.36	18.27	259.00	0.00	0.00	0.00
2,400.00	13.42	4.05	2,369.89	281.50	19.91	282.21	0.00	0.00	0.00
2,500.00	13.42	4.05	2,467.16	304.65	21.55	305.41	0.00	0.00	0.00
2,600.00	13.42	4.05	2,564.43	327.80	23.18	328.62	0.00	0.00	0.00
2,700.00	13.42	4.05	2,661.70	350.95	24.82	351.83	0.00	0.00	0.00
2,800.00	13.42	4.05	2,758.97	374.10	26.46	375.03	0.00	0.00	0.00
2,900.00	13.42	4.05	2,856.24	397.25	28.10	398.24	0.00	0.00	0.00
3,000.00	13.42	4.05	2,953.51	420.40	29.73	421.45	0.00	0.00	0.00
3,100.00	13.42	4.05	3,050.78	443.55	31.37	444.65	0.00	0.00	0.00
3,200.00	13.42	4.05	3,148.05	466.69	33.01	467.86	0.00	0.00	0.00
3,300.00	13.42	4.05	3,245.32	489.84	34.65	491.07	0.00	0.00	0.00
3,400.00	13.42	4.05	3,342.59	512.99	36.28	514.27	0.00	0.00	0.00
3,500.00	13.42	4.05	3,439.86	536.14	37.92	537.48	0.00	0.00	0.00
3,600.00	13.42	4.05	3,537.13	559.29	39.56	560.69	0.00	0.00	0.00
3,700.00	13.42	4.05	3,634.40	582.44	41.19	583.89	0.00	0.00	0.00
3,800.00	13.42	4.05	3,731.67	605.59	42.83	607.10	0.00	0.00	0.00
3,900.00	13.42	4.05	3,828.94	628.73	44.47	630.31	0.00	0.00	0.00
4,000.00	13.42	4.05	3,926.21	651.88	46.11	653.51	0.00	0.00	0.00
4,008.01	13.42	4.05	3,934.00	653.74	46.24	655.37	0.00	0.00	0.00
PARKMAN									
4,100.00	13.42	4.05	4,023.48	675.03	47.74	676.72	0.00	0.00	0.00
4,200.00	13.42	4.05	4,120.75	698.18	49.38	699.92	0.00	0.00	0.00
4,300.00	13.42	4.05	4,218.02	721.33	51.02	723.13	0.00	0.00	0.00
4,400.00	13.42	4.05	4,315.29	744.48	52.65	746.34	0.00	0.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Cook 21-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Site:</b>	WELD_COOK 25-9 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Cook 21-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Cook 21-9		
<b>Design:</b>	PLAN #1 8-16-10 RHS		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,500.00	13.42	4.05	4,412.56	767.63	54.29	769.54	0.00	0.00	0.00	
4,577.56	13.42	4.05	4,488.00	785.58	55.56	787.54	0.00	0.00	0.00	
<b>SUSSEX</b>										
4,600.00	13.42	4.05	4,509.83	790.77	55.93	792.75	0.00	0.00	0.00	
4,700.00	13.42	4.05	4,607.10	813.92	57.57	815.96	0.00	0.00	0.00	
4,800.00	13.42	4.05	4,704.37	837.07	59.20	839.16	0.00	0.00	0.00	
4,900.00	13.42	4.05	4,801.64	860.22	60.84	862.37	0.00	0.00	0.00	
4,972.34	13.42	4.05	4,872.00	876.97	62.03	879.16	0.00	0.00	0.00	
<b>SHANNON</b>										
5,000.00	13.42	4.05	4,898.91	883.37	62.48	885.58	0.00	0.00	0.00	
5,100.00	13.42	4.05	4,996.18	906.52	64.12	908.78	0.00	0.00	0.00	
5,200.00	13.42	4.05	5,093.45	929.67	65.75	931.99	0.00	0.00	0.00	
5,300.00	13.42	4.05	5,190.72	952.82	67.39	955.20	0.00	0.00	0.00	
5,353.94	13.42	4.05	5,243.18	965.30	68.27	967.71	0.00	0.00	0.00	
<b>Start Drop -2.00</b>										
5,400.00	12.50	4.05	5,288.07	975.60	69.00	978.04	2.00	-2.00	0.00	
5,500.00	10.50	4.05	5,386.06	995.49	70.41	997.97	2.00	-2.00	0.00	
5,600.00	8.50	4.05	5,484.68	1,011.94	71.57	1,014.47	2.00	-2.00	0.00	
5,700.00	6.50	4.05	5,583.82	1,024.96	72.49	1,027.52	2.00	-2.00	0.00	
5,800.00	4.50	4.05	5,683.36	1,034.52	73.17	1,037.10	2.00	-2.00	0.00	
5,900.00	2.50	4.05	5,783.17	1,040.60	73.60	1,043.20	2.00	-2.00	0.00	
6,000.00	0.50	4.05	5,883.13	1,043.21	73.78	1,045.81	2.00	-2.00	0.00	
6,024.87	0.00	0.00	5,908.00	1,043.31	73.79	1,045.92	2.00	-2.00	-16.27	
<b>Start 1874.00 hold at 6024.87 MD</b>										
6,100.00	0.00	0.00	5,983.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,083.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,183.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,283.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,383.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,483.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,583.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,683.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,783.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,883.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,024.87	0.00	0.00	6,908.00	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
<b>NIO</b>										
7,100.00	0.00	0.00	6,983.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,083.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,183.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,308.87	0.00	0.00	7,192.00	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
<b>CODELL</b>										
7,392.87	0.00	0.00	7,276.00	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
<b>GREENHORN</b>										
7,400.00	0.00	0.00	7,283.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,383.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,483.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,583.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,748.87	0.00	0.00	7,632.00	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
<b>JSAND</b>										
7,800.00	0.00	0.00	7,683.13	1,043.31	73.79	1,045.92	0.00	0.00	0.00	
7,898.87	0.00	0.00	7,782.00	1,043.31	73.79	1,045.92	0.00	0.00	0.00	

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Cook 21-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4873' & RKB 15' @ 4888.00ft (ASSUMED)
<b>Site:</b>	WELD_COOK 25-9 PAD	<b>North Reference:</b>	True
<b>Well:</b>	P_Cook 21-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Cook 21-9		
<b>Design:</b>	PLAN #1 8-16-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
PBHL_Cook 21-9(1330' FNL 2590' FEL)									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL_Cook 21-9(1330' - plan hits target center - Circle (radius 50.00)	0.00	0.00	7,782.00	1,043.31	73.79	1,301,077.30	3,232,364.06	40° 9' 24.703 N	104° 40' 7.172 W

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
700.00	700.00	8 5/8"	8.625	11.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,008.01	3,934.00	PARKMAN				
4,577.56	4,488.00	SUSSEX				
4,972.34	4,872.00	SHANNON				
7,024.87	6,908.00	NIO				
7,308.87	7,192.00	CODELL				
7,392.87	7,276.00	GREENHORN				
7,748.87	7,632.00	JSAND				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
850.00	850.00	0.00	0.00	Start Build 2.00
1,520.93	1,514.82	78.01	5.52	Start 3833.01 hold at 1520.93 MD
5,353.94	5,243.18	965.30	68.27	Start Drop -2.00
6,024.87	5,908.00	1,043.31	73.79	Start 1874.00 hold at 6024.87 MD
7,898.87	7,782.00	1,043.31	73.79	TD at 7898.87